ABSTRACT OF THE INVENTION

Some embodiments of the invention provide a router that can define a route that has different widths along different directions on the same layer. To facilitate the creation of such a route, some embodiments adaptively define the shape of interconnect-line ends (i.e., the shape of route-segment ends) on a particular layer based on the routing directions available on the particular layer. By so defining these shapes, these embodiments improve the alignment of route segments that have differing widths. In other words, dynamically defining the interconnect-line ends improves the shape of a route at bends along which the route transition from one width to another. Also, to facilitate the creation of a route with different widths and/or spacing in different directions on a particular layer, some embodiments define, for each available routing direction on the particular layer, an "unroutable" bloated region about a previously defined geometry (e.g., a previously defined obstacle, wire, or via pad) on the particular layer. An item's bloated region for a particular routing direction specifies the portion of the particular layer that is not available for route segments along the particular routing direction. As further described below, the item's bloated region for a particular direction is derived based on the minimum spacing required between the item and any route segment in the particular direction for the particular net.